

THE IMMIGRATION OF LEPIDOPTERA TO THE
BRITISH ISLES IN 1980, WITH AN ACCOUNT OF THE
INVASION OF THE PAINTED LADY:
CYNTHIA CARDUI L.

By R. F. BRETHERTON* and J. M. CHALMERS-HUNT**

1980 was generally an even poorer year for immigrants than 1979. There were, however, interesting features: early arrivals in April and in June, spectacular invasions of some common species, especially of the butterfly *Cynthia cardui* L., the Pyrale *Udea ferrugalis* Hbn., and the Tineid *Plutella xylostella* L. (*maculipennis* Curtis), and records of *Scopula rubiginata* Hufn., *Nola aerugula* Hbn., *Enargia paleacea* Esp., *Photodes extrema* Hbn., *Deltote bankiana* Hbn., which are local residents in Britain but which also appear as occasional immigrants. Of the scarcer species in almost all cases numbers of individuals reported were woefully low. The numbers arriving may not, indeed, have been quite as poor as the records suggest, because the persistently poor weather discouraged field work and to some extent the operation of static light traps, although the prevalence of cloudy nights with fairly high average temperatures may have favoured the attendance of such nocturnal immigrants as were present.

The season began with a small immigration noted in Sussex in early April (*Ent. Rec.*, 92 : 144), and another, coinciding with three days of warm south east and south winds about May 11/14. This consisted mainly of *Vanessa atalanta* L., which reached as far north as the Trossachs, Perthshire and Handa Island, West Sutherland by May 16 and 19; there was also a surprising capture of a single *Trichoptusia ni* Hbn. at Portland, Dorset, which perhaps arrived also with this movement (*Ent. Rec.*, 92 : 196). The first big invasion, including that of *C. cardui*, began after June 2, when the wind sources shifted suddenly from the North Atlantic to the south west and then to south and south east, bringing a current of warm air from north Africa and the Mediterranean. This was interrupted from June 7 to 11, but immigrant species became more numerous when southerly winds were resumed until about June 18.

Most of July was almost barren of arrivals, but towards its end an anti-cyclone became established over Scandinavia and north central Europe, with warm south east and south winds blowing round it across the North Sea mainly to northern Britain. These produced, after some forerunner species, the second great invasion of *C. cardui* and its fellow travellers up the east coast from Yorkshire to Orkney, from July 29 to 31. Rather later an area of high pressure also developed from the Azores to Spain, and as this moved eastwards south west and south winds brought probably the most varied immigration of the year to southern England in the first fortnight of August. Thereafter weather conditions again became very unsettled through the rest of August and in September, with alternating short periods of favourable and unfavourable air streams; but further

*Folly Hill, Birtley Green, Bramley, Guilford, Surrey GU5 0LE.

**1, Hardcourts Close, West Wickham, Kent BR4 9LG.

immigrations can be fairly clearly distinguished from August 24 into early September and again from September 15 to 28. This almost ended the migration season, as throughout October winds were northerly and temperatures low, with records of immigrant species extremely few.

The species whose main arrivals can be attributed to each of these periods are set out below, in the order of the first records:

April 2/7	<i>C. cardui</i> , <i>A. ipsilon</i> , <i>H. peltigera</i> , <i>N. noctuella</i> ; <i>V. atalanta</i> , 14 and later.
May 1/18	<i>V. atalanta</i> , <i>C. cardui</i> , <i>A. gamma</i> , ? <i>T. ni</i> (24.5).
June 2/6	<i>M. stellatarum</i> , <i>A. gamma</i> , <i>C. cardui</i> , <i>V. atalanta</i> , <i>N. noctuella</i> , <i>P. xylostella</i> , <i>H. peltigera</i> , <i>U. ferrugalis</i> .
June 12/16	<i>M. albipuncta</i> , <i>D. bankiana</i> , <i>H. peltigera</i> , <i>O. obstipata</i> , <i>A. gamma</i> , <i>P. extrema</i> , <i>P. saucia</i> .
July 26/31 (N. England and Scotland)	<i>E. occulta</i> , <i>N. aerugula</i> , <i>V. atalanta</i> , <i>C. cardui</i> , <i>A. gamma</i> , <i>P. xylostella</i> , <i>N. noctuella</i>
August 1/15 (South England)	<i>R. sacraria</i> , <i>P. unionalis</i> , <i>N. noctuella</i> , <i>A. gamma</i> , <i>V. atalanta</i> , <i>H. peltigera</i> , <i>E. parva</i> , <i>M. albipuncta</i> , <i>M. stellatarum</i> , <i>C. crocea</i> , <i>O. obstipata</i> , <i>S. rubiginata</i>
August 26/September 9	<i>R. sacraria</i> , <i>V. atalanta</i> , <i>C. cardui</i> , <i>C. crocea</i> , <i>M. stellatarum</i> , <i>U. ferrugalis</i> , <i>M. vitellina</i> , <i>H. armigera</i> , <i>A. convolvuli</i> , <i>A. gamma</i> , <i>D. orichalcea</i> , <i>P. unionalis</i> , <i>O. obstipata</i> , <i>A. atropos</i> , <i>D. nerii</i>
September 15/28	<i>P. saucia</i> , <i>M. unipuncta</i> , <i>D. ramburialis</i> , <i>U. pulchella</i> , <i>S. exigua</i> , <i>H. celerio</i> , <i>U. ferrugalis</i> , <i>H. armigera</i> , <i>M. albipuncta</i> , <i>C. croceus</i> .

In October and November no additional species were reported, and the only noteworthy influx was of a dozen *M. unipuncta* between October 22 and November 2 in south west Ireland.

Among the common immigrants, the great invasions of *C. cardui* are fully discussed and recorded in Annexe III. They were all accompanied by much smaller numbers of *Vanessa atalanta*; but this also arrived independently at other times and probably had more northerly points of origin. Several observers noted that its larvae survived better than those of *C. cardui*; but even so local breeding seems to have been reduced by the poor summer, and its total numbers in Britain may have been below average. In Dumbartonshire some were seen definitely migrating southwards on September 20 and 22, and the account of more than 100, with some *C. cardui* and a single *C. crocea*, on the coast at Girdleness and Newtonhill, in south Aberdeen and Kincardineshire on September 28 may have represented a southward movement rather than a fresh immigration. A presumably over-wintering example was seen in south Hampshire on January 24, and the first immigrants arrived in April and May;

there are few records for October, and the last was reported at Peacehaven, Sussex, on November 2.

Of *C. crocea* about 60 were reported, mostly very widely scattered. One was seen at Padstow, Cornwall on June 13, and another at Wistow, Hunts., on June 15. Most of the others were in a well defined group between August 27 and early September. These arrived at Lands End in some numbers, and were noted later up the west coast of England and in Scotland as far as Loch Lomond and Stirlingshire. The last example reported was on St. Agnes, Isles of Scilly, on October 4. In Ireland, one was seen at Old Lighthouse Is., Co. Down, on June 21, and another in Co. Wexford, on September 28. There was no sign of local breeding, and the species remains, as for many years, almost a scarce immigrant.

Plutella xylostella L. and *Autographa gamma* also came with *C. cardui*, especially in late July, when the former was said to be "in millions" at Spurn Point and in Orkney, and an estimated 1,000 *A. gamma* were seen at Spurn. *Nomophila noctuella* and *Udea ferrugalis* also accompanied them in smaller numbers, and the latter had a very large independent influx in mid September, noted especially in Essex, Westmorland and south west Ireland. There were also many separate influxes, beginning in May, of *A. gamma* on the south coast, and 160 were counted on August 27 in Cardigan-shire and 650 on August 13 at Beachy Head, E. Sussex. Its inland spread and local breeding, however seem to have been poor.

The resident immigrant *Phlogophora meticulosa* bred freely in the south through the mild winter, and was commoner than usual in May and June; but it was not generally much in evidence as an immigrant either then or later, although there was a definite influx to Lincolnshire where 159 were trapped at South Thoresby between September 16 and 22. *Agrotis ipsilon* began strongly in Sussex and elsewhere in April, and almost daily records of small numbers through July probably reflect local breeding; but it was not notably abundant as an immigrant in the autumn, apart from a large number reported at light at Swanage, with *Peridroma saucia*, on October 5. Elsewhere that species was certainly scarcer than usual. It was noticed at Hampstead, Middlesex on June 15 and 22, but the later records in September and through October were almost all of single examples and did not extend northwards beyond Abergele in Denbighshire and Blanchpeth in co. Durham. The last was at Leigh, Surrey, on October 28. *Macroglossa stellatarum* came in with the June immigrations in some numbers, getting as far north as the Isle of May, Fifeshire, Caerlaverock, Dumfriesshire, and Abergele, Denbighshire, from June 6 to 8, and being numerous in Warwickshire from June 15 to the end of the month. It was also recorded in south Devon through much of July and singly on August 10 and 28. It may be relevant that this was the only migratory species seen commonly in the French Pyrenees in late July and early August.

Records of the scarcer species are given in full in Annexe II; except for *Rhodometra sacraria* and *Heliothis peltigera*, all species were in very small numbers. Of *R. sacraria* some 20 were reported, almost all as singles except in Essex. The first on July 2, was fresh and was reliably said to have exuded meconium. This is an unusually early date for the species in England, and it is not clear how, or when, its parent may have arrived. Most of the remainder came as immigrants during the first half of August; it is possible that the few noted in Essex and Cornwall in late September and October were locally bred from the August arrivals. The total recorded was, however, below average.

Heliothis peltigera, with about 30 feral moths reported and over 100 larvae in various places along the south coast, had its best year since 1968. The first was at Ninfield, East Sussex on April 10. There was another at Wormley, Surrey on June 5, and eight more in various places from June 13 to 21, reaching as far north as Derby and Abergelge, Denbighshire. A further immigration probably accounted for all of the ten moths seen from Kent to Dorset from August 2 to 18; but in some cases larvae were found at the same time, and there is clear indication that three moths found on Looe Bar, E. Cornwall on August 22 and 23 were locally bred, and so perhaps were the few scattered moths reported between September 6 and 18. Larvae were very numerous on the coast of Kent and Sussex in late September and early October, presumably from August parents; but there is no evidence that any of these survived to produce moths in the wild.

Mention has already been made of the occurrence in 1980 of several examples, almost certainly short distance immigrants from across the North Sea, of resident British species. Others which may be suspected of having the same status are two *Meganola albula* trapped at Bradwell-on-Sea, South Essex on August 8 and 9, and also two specimens of *Euproctis chrysorrhoea* caught at the Spurn Observatory on July 30, and which if they were not immigrant, must have come a long way from their coastal haunts in Suffolk, Essex and Kent. In addition, in the invasions of early June and late July Mr. R. I. Lorimer trapped in Orkney examples of *Blepharita adusta* and *Papestra biren* of forms differing greatly from those found locally, and also several species previously unknown there, though resident on the Scottish mainland at varying distances to the south. A full note on these will appear elsewhere.

ANNEXE I

Recorders and localities

(The names of recorders who gave information about *C. cardui* are starred)

Agassiz, Rev. D., Heyshott, Sussex,
Bridport, Dorset.

*Allen, A. A., Woolwich, W. Kent.

*Archer-Lock, A. S., Padstow, W.
Cornwall; S. Devon.

Elliott, B., Portland, Dorset; Derbys.

*Elliott, R., St. Andrews, Fife.

Evans, K. A. G., Croydon, Addis-
combe, Surrey.

*Ezard, S., Rudston, S. E. Yorks.

- *Bainbridge, I., Spindlestone Haugh,
S. Northumberland, per A.
Long.
- *Baker, B. R., Near Lands End, W.
Cornwall; Caversham, Berks.
- *Baldwin, A. J., Halwell Forest, N.
Devon.
- *Bartlett, J., Banchory, Kinc., per
MRY.
- *Birkett, N. L., Grange, Sedbergh,
Westmld.
- Braddock, A. Derby, per CRP.
- *Bretherton, R. F., Bramley, Surrey.
- *Briggs, J., Westmld; N. Lancs.
- Brown, D. C., Lizard, W. Cornwall;
Dungeness, E. Kent; Charlecote,
Warwicks.
- *Burrows, D. S., Malham; Ilkley
Moor, Central Yorks.
- Burton, G. N., Sheppey, E. Kent.
- *Campbell, J. L., I. of Canna, Inner
Hebrides.
- Carlton, P. Roundhill Reservoir, N.
Yorks.
- *Chalmers-Hunt, J. M., E. Curthwaite,
Bowness-on-Solway, Cumber-
land; W. Wickham, W. Kent;
Nagden, E. Kent; Alnmouth,
Craster, N. Northumberland;
Tatsfield, Surrey.
- Chambers, D. A., E. Kent.
- *Christie, I. C., Dumbartons.; N.
Berwick; Isle of Coll., Argyll.
- *Classey, E. W., Southrop, Lechlade,
N. Glos (*Ent. Gaz.*, 31 : 228).
- *Clarke, W. A., Scarborough, Filey,
etc., N. E. Yorks, per P.Q.W.
- Convey, P., Winchester, per BS.
- Coster, W. L., Portland, Dorset;
Dungeness, E. Kent.
- *Coxey, S. Abergele, Llandulas,
Denbighshire.
- *Cramp, R. A., W. Blean, E. Kent;
Reigate, Surrey.
- *Dewick, A. J. & S. F., Bradwell-
on-Sea, S. Essex.
- *Dickinson, J., Blackburn, Lytham
St. Annes, N. Lancs.
- *Down, D. G., Canvey Is., S. Essex.
- *Dyson, R., Brighton, Shoreham,
Sussex.
- *Eley, Lady, Suffolk; Lock Ness,
Inverness.
- *Jackson, S. M., Tadcaster, Selby,
S. E. Yorks.
- Jewess, P., Newington, E. Kent.
- *Johnston, A. F., Isle of May,
Fife.
- *Kitchen, Rev. T. B., Scarborough,
N. E. Yorks per PQW.
- *Largen, R. Worthing, W. Sussex,
per CRP.
- Elvidge, M., Godalming, Surrey.
- *Fairclough, R., Leigh, Surrey.
- Fisher, J. B., Beaumont-cum-Moze,
S. Essex.
- *Fletcher, D. S., Cumbrian Fells,
Ent. Gaz., 31 : 246.
- Foster, A. P., Kingsdown, E. Kent;
Mawn Smith, Looe Bar, etc.,
Cornwall.
- *Gandy, M., Cardigans., Middsx.,
etc.
- Gardner, A. F. J., Southam, Mar-
ton, Charlcote, Warwicks.
- *Gibson, K., Mallaig; Shinat Is.;
North Rona, per F.H.
- Goater, B., Branscombe, S. Devon;
Portland, Dorset; Caerlaverock,
Dumfriesshire.
- Gregory, J., Par, E. Cornwall, per
CRP.
- Greenwood, J. A. C., Rogate, W.
Sussex.
- Halstead, A. J., Wisley, Surrey.
- *Hancock, E. E., Dolgelly Merioneth;
Dumfriesshire.
- *Harman, T. W., Sandwich Bay,
Canterbury, Westbere, E. Kent.
- Harmer, A. S., Lymington, S. Hants.
- Hadley, M. Beachy Head, E. Sussex,
per CRP.
- *Harrison, F., Derbyshire; S. Yorks;
Notts.
- Heal, N. F., Detling Hill, E. Kent.
- *Hedges, J. Ballakeighan, Isle of
Man.
- Heckford, R. J., Beaulieu Rd., S.
Hants.
- *Hare, L. H., West Pentire, W. Corn-
wall, per J. Heath.
- *Hillis, Dr. P., co. Down.
- *Hobbs, R. N., Kent; Sussex; Nor-
folk.
- Homer, T. G., Land's End, W. Corn-
wall, per BRB.
- *Houlston, R., S. E. Yorks, per
PQW.
- *Hulme, D. C., Muir of Ord,
Rossshire; E. Sutherland.
- *Humphreys, Col. R. B., Usk, Mon.;
Brancepath, co. Durham;
Smardale, Westmorland.
- *Horton, Dr. G. A. N., Usk, Mon.;
W. Sutherland; Caithness.
- Pilcher, R. E. M., South Thoresby,
E. Lincs.
- Pooles, S., Eastbourne, E. Sussex.
- Porter, J. Dungeness, E. Kent, per
BENHS.
- *Pratt, C. R., Peacehaven, Pevensey,
Normans Bay, E. Sussex.
- Pyman, G. A., Essex.
- Radford, J. T., Arundel, W. Sussex,
per CRP.

- Langmaid, Dr. J. R., Southsea, S. Hants, per BS.
- *Laidlaw, J., Teignmouth, S. Devon.
- *Leece, J., Handa Is., W. Sutherland per DCH.
- *Leedal, A. Lancaster, per JB.
- *Lewis, I. T., Hod Hill, Dorset.
- Long, A. G., Whitley Bay, S. Northumberland.
- *Longdon, M. R., Dumpton Gap, Ramsgate, Joss Bay, E. Kent.
- *Lorimer, R. I., Ophir, Orkney; Totteridge, Herts.
- *McAughton, J., Ring Point, Loch Lomond, per JB.
- *Marren, P., Banffshire; N. Aberdeens.
- *Megginson, K., Scarborough, Robin Hood's Bay, N. E. Yorks, per PQW.
- *Miller, J. R. Crieff, S. Perths; Argyll; Inverness; St. Andrews, Fife.
- *Mitts, P., Girdlestone Ness, S. Aberdeens; Newtonhill, Kinc., per MRY.
- *Morrison, R. C., Troutsdale, N. E. Yorks, per PQW.
- *Morton, A. C. C., Folkestone, E. Kent.
- Messenger, J. L., Wormley, Surrey.
- *Muggeleton, J. C., Cape Wrath, W. Sutherland.
- Notton, J. H. F., Berks, per BRB.
- O'Connor, Dr. J. co. Wexford, Ireland.
- *O'Heffernan, H. L., Chillington, Slapton, S. Devon.
- Owen, J. E., Dymchurch, E. Kent.
- *Parnaby, Mrs. E. M. I., Scarborough, N. E. Yorks, per PQW.
- *Palmer, S. and B., Aberdeens., per MRY.
- *Parsons, M. Ninfield, etc., E. Sussex, per CRP.
- *Pelham-Clinton, E. C., Winchburgh, W. Lothian; Porlock, W. Somerset.
- *Peers, M., Breconshire, per J. P. S.-B.
- Pickering, R. R., Aldwick Bay, Pagham, W. Sussex, per BS, CRP and CJ.
- Pickles, A. J., Lymington, S. Hants; Swanage, Dorset, per BENHS exhibition and BS.
- *West, B. K., Freswick, Caithness.
- *Wild, E. H., Selsdon, Surrey; Swanage, Dorset; St. Lawrence, Isle of Wight; Dungeness, E. Kent.
- *Winter, P. Q., Muston, etc., S. E. Yorks.
- Rees, D., Eversley, N. Hants., *Bull. A. E. S.*, 39 : 172.
- *Robertson, A. S., Truro, Roseland, W. Cornwall, *Ent. Gaz.*, 31 : 253.
- *Sankey-Barker, J. P., Brecons.; Radnors.
- *Scott, R. E., St. Agnes, Isles of Silly.
- Senior, G., Dungeness, E. Kent, per RGC.
- Simpson, M. S. L., Wistow, Hunt, *Bull. A. E. S.* 39 : 172.
- *Skinner, Mrs. P., Newton Abbot, S. Devon.
- Skinner, B., Dungeness, E. Kent; Swanage, Dorset; Pagham, W. Sussex.
- *Smith, D. J., Aberystwyth, Cards.; Shropshire.
- *Smith, P. Fringringhoe, N. Essex, per GAP.
- *Softly, R. A., Hampstead, Middsx; Swanage.
- Sokoloff, P., Orpington, W. Kent; Herne Hill, Surrey; Northumberland.
- *Spencer, B. R., Spurn Bird Observatory, S. E. Yorks.
- *Summers, P., Hawick, Roxburghs; Ranmore, Surrey; Verwood, Cranborne, Dorset; Black Torrington, N. Devon.
- *Sutton, S. R., Leeds, Yorks.
- Sterling, D. H., Leckford, N. Hants; Winchester, S. Hants.
- Tapp, A. E., Dungeness, E. Kent.
- *Thomas, R. J., Boat of Garten, Inverness.
- Thomson, G., co. Cork, W. Ireland.
- *Titcombe, C., Bulwark, etc., Mon., per GANH.
- Tynan, A. K., Mull of Galloway, Wigtons., per AGL.
- Walley, P. F., Dallington, E. Sussex.
- *Wallis, A. P., Scarborough, etc., N. E. Yorks, per PQW.
- *Wardell, W. R., Scarborough, N. E. Yorks, per PQW.
- *Waring, P., Arnside, N. Lancs, per JB.
- Watson, A. St. Annes-on-Sea, N. Lancs per JB.
- Weir, Miss J., near Guilford, Surrey.
- *Wykes, N. G., Uploders, Eggardon Hill, Dorset.
- Youden, G., Dover, E. Kent.
- *Young, M. R., Forties oil rigs, North Sea; Aberdeenshire; Kincardineshire.

Records of Scarcer Immigrant Species in 1980

- DIASEMIOPSIS RAMBURIALIS Dup. (2) S. HANTS: Beaulieu Road station, 19.8 (HJH). W. SUSSEX: Aldwick Bay, 17.9 (RRP).
- PALPITA UNIONALIS Hbn. (5) S. ESSEX: Bradwell-on-Sea, 14.8 (AJD). S. HANTS: Lymington, 1.8 (AJP). SURREY: Bramley, 6/7.8, worn female, eggs, 21.10, worn male, possibly bred on garden jasmine; Herne Hill, 4.9., very worn male in a train (PS).
- NYMPHALIS ANTIOPA L. (2) S. NORTHUMBERLAND: Whitley Bay, 6.8 (AGL). N. YORKS: Roundhill Reservoir, 12.10 (P.C.).
- NYMPHALIS POLYCHLOROS L. (1) SURREY: Near Guildford, 13.9., sitting on a kitchen window ledge (probably immigrant) (JW)
- SCOPULA RUBIGINATA Hufn. (1) E. KENT: Sandwich Bay, 15.8.
- RHODOMETRA SACRARIA L. (22) W. CORNWALL: Mawnan Smith, 28.10, male (APF). S. ESSEX: Bradwell-on-Sea, 5.8., 6.8(2), 22.9., 23.9., 26.9., 3.10 (AJD, CFD). N. ESSEX: Fingringhoe, n.d. N. HANTS: Leckford, 15/16.8, male (DHS). E. KENT: East Blean, 2.7., male, which ejected meconium (ESB); Detling Hill, 10.8, male (NFH); Dymchurch, 14.8 (JAO). W. KENT: Tonbridge, 1.8., male (AET). SURREY: Croydon, 13.8 (KAGE); Selsdon, 15.8, male (EHW). E. SUSSEX: Dallington, 8.8 (PFW); Peacehaven, 7.9 (CRP); Crumbles, 21.9., at dusk (CRP). W. SUSSEX: Heyshott, 8.8 (DA); Worthing, 29.8 (RL). WARWICKS: Charlecote, 26.9., male (DCGB).
- ORTHONAMA OBSTIPATA F. (6) BERKS: Caversham, 3/4.9 (BRB). E. CORNWALL: Par, 1.8 (JG). DORSET: Swanage, 3.9., female (AJP). ORKNEY, 27.8., female (RIL). E. SUSSEX: Pevensey, 13.6 (CRP). WARWICKS: Charlecote, 26.9 (AFJG).
- AGRIUS CONVULVULI L. (6) MID CORK: Fountainstown, 30.9 (AAM). S. E. Lincs: South Thoresby, 20.9 (REMP). MONMOUTHs: Bulwark, 28.9 (CT). W. SUSSEX: Aldwick Bay, 26.6, female at rest on door (RRP). WEXFORD: Old Head of Kinsale, 17.9 (GT). N. E. YORKS: Robin Hood's Bay, 9.9 (SRS).
- ACHERONTIA ATROPOS L. (4) DERBYS: Chesterfield, 25.9, one female brought in (BE). SURREY: Thorpe, male, 31.8 (Boon *Bull. Amat. ent. Soc.*, 40 : 15). WARWICKS: Southam, 28.9, female at outside light (AFJG). AT SEA: Forties Oil Platform, 110 miles east of Aberdeen, 9.10 (MRY).
- DAPHNIS NERII L. (1) BUCKS: High Wycombe, worn male, 11.9 (Cave, *Bull. Amat. ent. Soc.*, 40 : 15).
- HYLES GALLII Rott. (1) E. KENT: Dungeness, 25.7, in trap (GBS).
- HYLES LINEATA LIVORNICA Esp. (2) S. DEVON: Chillington, 11.6, large and fresh (HLO'H). E. KENT: Dymchurch, 26.6, in trap (JEO).
- HIPPOTION CELERIO L. (1) S. E. YORKS: Rudston, 19.9 (ASE).
- UTETHEISA PULCHELLA L. (1) W. SUSSEX: Arundel, 19.9 (ASE).
- NOLA AERUGULA Hbn. (1) S. E. YORKS: Spurn Bird Observatory, 26 & 27.7, in m.v. trap (BRS).
- EUROIS OCCULTA L. (3) N. ABERDEEN: Old Meldrum, 26.7 (RDY). DUNBARTONS: Loch Lomondside, 26.7, of continental form (ICC). W. LOTHIAN: Winchburgh, 26.7, of continental form (ECP-C).
- MYTHIMNA ALBIPUNCTA D. & S. (8) DORSET: Swanage, 5.10, one male, one female (AJP). S. HANTS: Southsea, 23.9 (JRL). E. KENT: Kingsdown, 12.6, worn male at light (APF); Dungeness, 6.9 (JP); 21.9., female (WLC). E. SUSSEX: Pevensey, 7.8 (CRP). ISLE OF WIGHT: St. Lawrence, 10.9 (EHW).
- MYTHIMNA VITELLINA Hbn. (3) W. CORNWALL: Lizard, 29.8 (DCGB); Kennack Sands, 20.9, worn male (APF). DORSET: Swanage, 20.9, male (RGC).
- MYTHIMNA UNIPUNCTA Haw. (18) MID CORK: Fountainstown, 17.9., 24.9., 22.10/2.11 (twelve) (AAM). W. CORNWALL: Mawnan Smith, 30.10, two worn males, 11.12, worn male (APF). E. SUSSEX: Eastbourne, 1.9 (CRP).
- ENARGIA PALEACEA Esp. (2) S. HANTS: Winchester, 10/11.8., very worn (DHS). W. SOMERSET: Porlock, 31.7, very large, pale (ECP-C).
- PHOTODES EXTREMA Hbn. (1) S. ESSEX: Bradwell-on-Sea, 14.6 (AJD).

- SPODOPTERA EXIGUA Hbn. (3) S. ESSEX: Bradwell-on-Sea, 20.9 (AJD). SURREY: Leigh, 19.9 (RF); Addiscombe, 21.9 (KAGE).
- HELICOVERPA ARMIGERA Hbn. (5) DORSET: Swanage, 5/6.10 (EHW). S. HANTS: Lymington, 30.9 (AJP). E. KENT: Newington, 20/21.9 (PJJ). SURREY: Bramley, 29/30.8 (RFB). WARWICKS: Marton, 21.9, female (AFJG).
- HELIOTHIS PELTIGERA D & S. (about 30, over 100 larvae and 2 pupae) BERKS: Emmer Green, Caversham, 2.6., 7.6. (JHFN). W. CORNWALL: Near Land's End, 24/31.8, two pupae dug near rest harrow patches (TGH). E. CORNWALL: Looe Bar, 22.8., male at *Silene maritima*, female drying wings, 23.8., male (APF). DENBIGHS: Abergele, 11/12.6., fresh male (SC). DERBYS: Derby, 18.6 (AB). S. DEVON: Branscombe, 3.8 (BG). DORSET: Portland, 18.6., worn male, 21., female (RGC); Swanage, 3/4.8., two, 3.9 (AJP); Studland, 6.9 (DCGB). S. HANTS: Lymington, 13/14.6 (AJP). E. KENT: Dungeness, 3 & 10.8, also larvae on *S. viscosa* 21 & 22.9 (EHW); Sandwich Bay, 15.8 (TWH); Boughton Aluph, 11/12.9 (ME). MIDDLESX: Islington, 15.6 (MG). SURREY: Wormley, 5/6.6, in trap (JLM); Wisley Gardens, 18/19.6 (AHH), Addiscombe, 18.9, male (KAGE). W. SUSSEX: Rogate, 14/15.6, fairly fresh (JACG); Pagham, 7.8, two on ragwort, also larvae (DA); Aldwick Bay, 12.9, and larvae on *S. viscosa* 12 & 16.9 (DGS). E. SUSSEX: Ninfield, 10.4. in trap before midnight (MP); Eastbourne, 9.8 (SWP); Pevensey, 12.8., Crumbles, larvae 12.8, six, 4.10, 50 in an hour on *S. viscosa* (CRP).
- EUBLEMMA PARVA Hbn. (2) S. HANTS: Southsea, 7.8 (JRL). W. SUSSEX: Heyshott, 6.8 (DA).
- DELTOTE BANKIANA Hbn. (2) N. ESSEX: Beaumont-cum-Moze, 14.6, in trap (JBF). E. KENT: Kingsdown, 12.6, male at light (APF).
- TRICHOPLUSIA NI Hbn. (3) MID CORK: Fountainstown, 3.9, male (AAM). DORSET: Portland, 24.5, male at light (WLC). E. KENT: Dungeness, 22.7, one identified but escaped (EHW).
- DIACHRYSLA ORICHALCEA F. (2) S. HANTS: Lymington, 1/2.9 (AJP), 5.9 (ASH).

(To be continued)

HESPERIID LARVAE AS PREY FOR A SPHECID WASP. — During a visit to Nigeria in December 1980, I happened across the larva of *Spialia ploetzi* Aurivillius in a Lagos hotel garden. It was feeding on the weed, *Triumfetta* (Tiliaceae) which looks rather like European *Malva*.

As is usual in the HesperIIDae, the caterpillars were living singly inside an envelope made by folding the leaf across so that underside of the leaf can be seen from above. I was studying one of these envelopes when a large sphecid wasp landed on the leaf and immediately chewed a hole in the leaf, extracted the larva and flew off. It must be assumed that the HesperIIDae larvae live in envelopes for protective reasons and I was curious as to how the wasp had managed to locate the larva with such speed and precision. Ten minutes later the wasp came back and provided the answer: visual predation once removed. The underside of the *Triumfetta* leaf is lighter than the upperside and the wasp was systematically investigating all leaves where the upperside could be seen from above. A fair proportion of such leaves were HesperIID envelopes. Knowing how Sphecid wasps can navigate through acquired topographical knowledge, there is little doubt that its hunting behaviour in this case was acquired rather than intrinsic. When HesperIID larvae become scarce, another visual search pattern will be adopted. I